WRAG STEERING GROUP MEETING MINUTES

Thursday 2nd November 2017

ADAS Boxworth, 1.45pm – 3.45pm

Members present (9+4):

James Clarke (Chairman), Richard Hull (Secretary), Ingrid den Hoed (CRD, by phone), Paul Gosling (AHDB), Gordon Anderson-Taylor (Bayer), Iain Ford (BASF), Eileen Patterson (Dow), Will Foss (AIC), David King (Syngenta). Plus, Stephen Moss (Independent) Lynn Tatnell (ADAS), Laura Davies (ADAS), Barry Hunt (Monsanto).

1. Apologies for absence:

Clare Bend (AIC), Jason Tatnell (Syngenta), Paul Neve (Rothamsted), Steve Cranwell (DuPont).

2. The minutes of the last Steering Group meeting (18th March 2016) were approved

The group would like to thank AHDB Cereals & Oilseeds for kindly agreeing to host the WRAG website, and to Jason Pole for his help in populating the pages with the relevant information.

3. Mode of Action labelling on products

The group had a discussion around the Mode of Action (MOA) being more prominent on pesticide labels. A prominent placement of the MOA would make it easier for end users to make a more informed choice about which class of pesticide was being applied, avoiding multiple sprays of the same MOA. Currently there is no initiative to make this change. There is general support for the MOA to be more visible, mainly driven by the insecticide groups. This is due to increasing resistance in pests and a reduction in available actives groups. It was felt this is easier for insecticides as there are currently no co-formulations on the market. Whereas, many herbicide and fungicide products are sold as mixtures with actives that have different MOA. Another issue raised was that even within the same MOA group, for example the ALS sulfonylurea's, there are actives that either target grassweeds or broad leaved weeds, or both.

A discussion was had about where the MOA should be more visible. Should it be more prominent only on the label, is this too late in the decision-making process? An additional place could be on software like Muddy Boots or Gate Keeper, i.e. when an agronomist is composing a recommendation.

The group therefore proposed that if there is going to be change to where the MOA is located on a pesticide label, this should be across all pesticide products, with an assessment of the merits to the approach. Is the pesticide label the only place the MOA should be more visible? Any changes should use the existing HRAC labelling system for herbicide MOAs. And finally, if this change was made, there will need to be training and a communication strategy put in place to explain these changes across to agronomists, famers and spray operators.

Actions:

Labelling will be discussed at next FRAG and IRAG meeting (Paul Gosling and Richard Hull). Completed.

CRD and CPA to discuss (Ingrid den Hoed)

4. Update current glyphosate position (UK, Europe and projects), James Clarke, ADAS)

Following on from recent European and NFU workshops on the potential threat posed by glyphosate resistance in the UK, the group discussed how WRAG could help protect this vital active for future use. Discussion also evolved around new avenues to disseminate the WRAG guidelines, and whether they needed updating in the light of the recent research from Rothamsted Research and ADAS Boxworth.

The group agreed we should highlight that the threat of resistance to glyphosate in the UK is a real threat, with the highest risk area being the amenity sector, followed by the horticultural and arable sectors.

It was agreed that the current WRAG guidelines are still a good set of robust guidelines, but maybe we need to communicate them more widely. We need to be better at getting the right information, to the right people, in the right way. Suggestions included simple clear stickers for the side of spray units. It was suggested that the same care and attention was not paid to spraying stubbles with glyphosate, as might be the case when spraying other actives once a crop is drilled.

Since the meeting, Emma Hamer of NFU has been in touch to ensure the WRAG guidelines are covered in the NRoSO annual training event next year, but it was too late for this year.

The other outcomes from the discussion where:

- Need to know the outcome in authorisation status first, but we need to be ready to maximise impact ahead of next spraying season. So, a target date of Cereals 2018 for any new KE initiative.
- Agreed that there is merit in multiple approaches of communication, but co-ordinated.
- Barrie Hunt agreed to take away an action to discuss with the Glyphosate Task Force (GTF) how this could happen through their leadership. WRAG agreed to help in producing the consistent messages. AHDB thought they would be able to help with communications and we would also use all channels, so NFU, AIC, CPA etc. etc. But action for now is with Barrie and GTF.

- WRAG will make available a set of slides encompassing the WRAG glyphosate guidelines. These will hopefully be available through the AHDB WRAG website.

Actions:

Change AHDB WRAG glyphosate leaflet in two places; clarify the wording under Prevent Survivors on page 1, and amend the link (now on AHDB WRAG website) to the full 8-page WRAG guidelines on page 2. (James Clarke) The same changes will be made in the full 8-page version. Completed

Barrie Hunt to discuss with the GFT how best to achieve a higher profile campaign regarding glyphosate. (Barrie Hunt)

5. Group membership

The group discussed the membership of WRAG, after being approached by organisations wishing to join the Steering Group. It was agreed that the core principles of membership should not change – therefore involved in herbicide resistance research and hence having research-based evidence and knowledge to bring to the table. The role that applicants could have in this respect had been requested, but to date nothing had been received. Any organisation or individual who approached WRAG will be added to the mailing list to receive the minutes of any meeting held. We have recently added several to the mailing list, including Hazel Doonen (AIC) and Emma Hamer (NFU).

Actions:

Future membership of the group will be discussed at the next meeting because of the potential mergers of various companies over the next few months. (All)

IRAG will discuss membership at next meeting a few weeks, will receive feedback from chairman Steve Foster and aim to make sure there is consistency between RAGs. (Richard Hull) Paul Gosling agreed to discuss within FRAG.

6. Update on BGRI project (Richard Hull, Rothamsted)

Richard gave the group an update on Rothamsted Research's work on the BBSRC AHDB funded LOLA Black-grass Resistance Initiative. The four-year project has 9 months left. The main outcomes since the last meeting were:

- 400 half-sib black-grass seed families produced. These are part on a quantitative genetics study; looking at the heritability of NTSR, cross resistance patterns and life history trade-offs. Three very large phenotyping experiments conducted to determine the level of NTSR in all seed families. Also, a life history experiment recently finished looking at various characteristics, including initial growth rate, time to flowering / seed shed and number of inflorescences.
- Screened all 132 LOLA black-grass populations in glasshouse dose response experiment to glyphosate. Results show variation in susceptibility between populations, but nothing that was resistant. The agronomy data gathered from these fields where the populations were obtained showed a significant link between the

number of applications of glyphosate and the percentage of the black-grass population exposed to glyphosate with populations that had lower susceptibility.

7. Introduction of ADAS Brome project (Laura Davies, ADAS)

Laura introduced and gave preliminary findings from a new AHDB funded brome project which is led by ADAS, with Rothamsted Research, Monsanto, BASF, Bayer, Dow and UPL as project partners. There have been increasing reports of poor control of brome species in the UK, but no confirmed cases of resistance yet. World-wide seven brome species have been confirmed with herbicide resistance to a range of actives, many of which are used in the UK regularly for control (ALS, ACCase, glyphosate, and photosystem II inhibitors).

The project has 4 objectives:

1. Assess the increasing presence of problematic brome populations in UK
2. Assess possible herbicide resistant brome populations and investigate the processes that may lead to herbicide resistance
3. Determine the best herbicide application timing to help prevent resistance evolution
4. Agree and communicate an integrated weed management system to help prevent the evolution of herbicide resistance

There are 6 work packages:

1. Brome survey
2. Herbicide screening
3. Low dose selection
4. BGRI brome survey (Rothamsted research)
5. Herbicide application timing
6. Knowledge transfer, prevention of resistance

So far, the project had concentrated on conducting a farmer / agronomist survey to find out the extant on brome species in the UK. 200 respondents replied spanning the whole of the UK and Northern Ireland, with sterile brome being the most abundant. 58 seed samples were sent in for resistance testing and identification. Of these 58 samples, 38% were misidentified by the sender. These samples will be tested in a glasshouse experiment with a range of herbicides and MOA. The respondents were also asked about why they thought brome populations may be increasing or decreasing and the herbicides used to target brome species.

8. Report of recently finished Agrimetrics project 'Improving the efficacy of pre-emergence herbicides for control of black-grass' (Stephen Moss Consulting)

This project was funded by Agrimetrics and most of the work was conducted by Andrew Mead and Suzanne Clark of the Applied Statistics group at Rothamsted Research. They used company data very kindly supplied by Bayer, BASF, Syngenta and DuPont. This data set contained efficacy trials data from 2001 – 2014 for 400 field trials (516 data points) where either flufenacet + DFF or flufenacet + pendimethalin was applied only. Rainfall data was obtained from >200 stations, and was used as a proxy for soil moisture. This weather was broken down into 1 week periods, stretching 6 weeks before and after application and drilling. A programme called REML was used to conduct the modelling exercise, and the main findings were:

- Mean efficacy of 74%
- An increase in efficacy with later autumn drilling date
- A slight loss in efficacy over the period 2001 to 2014
- Better efficacy with higher rainfall in the period after drilling.
- Limited scope for a decision support system to improve control due to the greater impact of post-drilling (harder to predict) than pre-drilling rainfall.

9. Introduction of IWMPraise project (Richard Hull, Rothamsted)

Richard introduced a recently start EU Horizon 2020 funded project called IWMPraise, which stands for Integrated Weed Management: PRActical Implementation and Solutions for Europe. This is a five-year project with seven European partners, France, Netherlands, Denmark, Spain, Italy, Slovenia and Switzerland and >40 collaborators. The project is being coordinated by Aarhus University in Denmark and the lead scientist is Per Kudsk. The main UK partners are Rothamsted Research and NIABTAG, but also SLY Europe Ltd, Courtyard Agriculture Ltd, Intelligent Precision Farming, Garford Farm Machinery Ltd, Innovation for Agriculture, Association of Independent Crop Consultants, ABACUS Agriculture Ltd., Anglia Farmers and Cotswolds Seeds.

There are four main objectives:

1. To quantify and address current socio-economic and agronomic barriers to the uptake of IWM across the cropping system, including perceived short term economic losses and resistance to change. Output: **Review of barriers to IWM uptake in Europe.**

2. To develop novel alternative weed control measures and optimise the efficacy, applicability and use of novel as well as existing alternative weed control measures as stand-alone methods or in combination with other methods. Output: **a 'tool box' of validated IWM methods.**
3. To design, demonstrate and assess the performance and environmental and economic sustainability of IWM strategies in various management scenarios. In each country, lead users and end users, research institutes and SMEs will work closely together. Output: **validated context specific IWM strategies for the various management scenarios that address the needs and concerns of end users.**
4. To make the results known publicly through dissemination and outreach, and development of educational and training programmes to support the adoption of IWM by European farmers. Output: **On-line information, farmer's field days, educational programmes, dissemination tools.**

The work is carried out across 10 work packages, for more information visit: https://iwmpraise.eu/

AOB

Stephen Moss mentioned his recent six-page review article: 'Black-grass (*Alopecurus myosuroides*): why has this weed become such a problem in western Europe and what are the solutions?' This article appeared in Volume 28 No. 5 of *Outlooks on Pest Management*, published by Research Information Ltd, and the pdf is made available here with the publisher's permission. Copies of *OPM* articles are available on the IngentaConnect platform at http://www.ingentaconnect.com/content/resinf/opm"

Date and location of next meeting

1st November 2018 at ADAS Boxworth, start time approx. 1.30pm